Dräger

Babytherm® 8000 LDR

Warming Bed

Instructions for Use

NOTICE

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Introduction

Operator's Responsibility for Infant Safety

For correct and effective use of the product and in order to minimize hazards it is mandatory to carefully read and to observe all portions of this manual.

The design of the equipment, the accompanying literature, and the labeling on the equipment take into consideration that the purchase and use of the equipment are restricted to trained professionals, and that certain inherent characteristics of the equipment are known to the trained operator. Instructions, warnings, and caution statements are limited, therefore, largely to the specifics of the Dräger design. This publication excludes references to various hazards which are obvious to a medical professional and operator of this equipment, to the consequences of product misuse, and to potentially adverse effects in infants with abnormal conditions. Product modification or misuse can be dangerous. Dräger disclaims all liability for the consequences of product alterations or modifications, as well as for the consequences which might result from the combination of this product with other products whether supplied by Dräger or by other manufacturers if such a combination is not endorsed by Dräger.

The operators of the heated bassinet system must recognize their responsibility for choosing appropriate safety monitoring that supplies adequate information on equipment performance and infant condition. Infant safety may be achieved through a wide variety of different means ranging from electronic surveillance of equipment performance and infant condition to simple, direct observation of clinical signs. The responsibility for the selection of the best level of infant monitoring lies solely with the equipment user.

Limitation of Liability

Dräger's liability, whether arising out of or related to manufacture and sale of the goods, their installation, demonstration, sales representation, use, performance, or otherwise, including any liability based upon Dräger's Product Warranty, is subject to and limited to the exclusive terms and conditions as set forth, whether based upon breach of warranty or any other cause of action whatsoever, regardless of any fault attributable to Dräger and regardless of the form of action (including, without limitation, breach of warranty, negligence, strict liability, or otherwise).

THE STATED EXPRESSED WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NONINFRINGEMENT.

Dräger shall not be liable for, nor shall buyer be entitled to recover any special incidental, or consequential damages or for any liability incurred by buyer to any third party in any way arising out of or relating to the goods.

Limited Warranty

All Dräger products are guaranteed to be free of defects in material and workmanship for a period of one year from date of delivery.

The following are exceptions to this warranty:

1. Defects caused by misuse, mishandling, tampering, or by modifications not authorized by Dräger or its representatives are not covered.
2. All consumable and disposable products are guaranteed to be free from defects upon shipment only.

Any product which proves to be defective in workmanship or material will be replaced, credited, or repaired with Dräger holding the option. Dräger is not responsible for deterioration, wear, or abuse. In any case, Dräger will not be liable beyond the original selling price.

This warranty is rendered void and Dräger shall not be held liable for condition as resultant from:

1. Damage to the unit is incurred as a result of mishandling.
2. The customer fails to maintain the unit in a proper manner.
3. The customer uses any parts, accessories or fittings not specified or sold by Dräger.
4. Sale or service is not performed by an authorized service/dealer.

Application of this warranty is subject to the following conditions:

1. Dräger or its authorized representative must be promptly notified, in writing, upon detection of the defective material or equipment.
2. Contact Dräger Customer Service at 1-800-4DRAGER for a Return Authorization Number.
3. Defective material or equipment must be returned, shipping prepaid, to Dräger or its authorized representative.
4. Examination by Dräger or its authorized representative must confirm that the defect is covered by the terms of this warranty.

5. Notification in writing, of defective material or equipment must be received by Dräger or its authorized representative no later than two (2) weeks following expiration of this warranty.

The above is the sole warranty provided by Dräger. No other warranty expressed or implied is intended. Representatives of Dräger are not authorized to modify the terms of this warranty.

Dräger, Telford, PA

Definitions and Symbols

Warnings

A WARNING statement refers to conditions with a possibility of personal injury or death if disregarded.

Cautions

A CAUTION statement designates the possibility of damage to equipment or improper operation if disregarded.

Notes

A NOTE provides additional information intended to clarify apparently contradictory or confusing situations.

Terminology

Inspection	examination of actual condition
Service	measures to maintain specified condition
Repair	measures to restore specified condition
Maintenance	inspection, service, and repair, where necessary
Preventive Maintenance	Maintenance measures at regular intervals

Typing conventions in this manual:

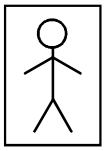
LED messages are printed in bold type:

Example: **SEt**

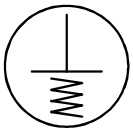
Symbols

CAUTION: Refer to accompanying documents before operating equipment.

ATTENTION: Consulter les documents ci-joints avant de faire fonctionner l'appareil.



Denotes IEC601-1 type of applied part.



Protective earth symbol.

General WARNINGS and CAUTIONS

Warning: Strictly follow this Operator's Instruction Manual. Any use of the product requires full understanding and strict observation of all portions of these Instructions. The equipment is only to be used for the purpose specified under "Intended Use." Observe all WARNINGS and CAUTIONS as rendered throughout this manual and on labels on the equipment.

Warning: This device is to be used only in rooms with line power installations complying with national safety standards for hospital infant rooms. To maintain grounding integrity, connect only to a "hospital grade" receptacle. Always disconnect power before servicing.

Warning: Do not use in the presence of flammable anesthetics. Turn off and disconnect oxygen supply when performing cleaning and service. Keep matches, lighted cigarettes, and all other sources of ignition out of the room in which the Babytherm is located. Small quantities of flammable agents, such as ethyls and alcohol, can cause a fire in connection with oxygen left in the Babytherm in the presence of ignition sources.

Warning: Do not use cellular phones or similar wireless communication equipment within 33 feet (10 m) of the Babytherm 8000 LDR. Wireless phones may cause malfunction in electromedical equipment.

Caution: Restriction of Distribution: Federal Law restricts this device to sale by or on the order of a physician.

Caution: Maintenance: In case of malfunction of this device, contact your local DrägerService^{SM} technician or our Factory Authorized Technical Service Center. The device must be inspected by competent and factory authorized technical service representatives at regular intervals. A record must be kept on this preventive maintenance. Maintenance or repair of the Babytherm 8000 LDR shall be performed only by Dräger authorized technical service representatives.

Warning: Never operate the heated bassinet if it has suffered physical damage or does not seem to operate properly. In this case, always refer servicing to properly trained and factory authorized service personnel.

Precautions During Preparation

Warning: Use of gel mattress when mattress heater is switched off will result in infant becoming hypothermic. Use foam rubber mattress when mattress heater is not in use for extended periods (> 15 min.).

Caution: Never route infant circuits or lines over top of panels – they may get pinched when folding up panels or when installing cover.

Precautions During Operation

Warning: To prevent infant fall, do not leave infant unattended when any panels are down. All panels must be erect and secure during transport to prevent infant fall.

Warning: When folding up surrounding panels, take care not to pinch infant body parts, circuits, or other items, such as sheets.

Warning: Temperature Monitoring: Check the infant's temperature and skin condition at regular intervals and adjust temperature setting to individual infant needs. Infant temperature must be monitored particularly carefully during phototherapy or while a radiant warmer is used in conjunction with the Babytherm heated bassinet.

Warning: Mattress Heater: When mattress heating is used, the gel mattress must be placed directly on the heated tray surface. Always take into account warm-up time of the mattress (approximately 1 hour) before placing an infant in the bassinet.

Warning: To minimize infant overheating, always consider effect of additional heat sources, such as phototherapy lamps or radiant warmers. They increase the heat directed to the infant. Avoid direct sunlight.

Warning: Do not obstruct conductive heat transfer by placing additional blankets or other insulating covers underneath the infant.

Warning: Set temperatures in the lower extended temperature range only on the order of a physician. Check the infant's temperature and skin condition at regular intervals.

Warning: Check the infant's temperature and skin condition at regular intervals.

Warning: Always use a proper fitting thin sheet (Part No. 2M21272). Do not fold the sheet under the gel mattress more than 3". To prevent infant fall in Trendelenberg or reverse Trendelenberg position always use proper fitting mattress sheet.

Warning: When used with an infant radiant warmer, check its operator's manual for directions of the correct heat level and distance to the infant.

Warning: Use of radiant warmers may increase insensible water loss. Measures to maintain desired fluid levels should be considered.

Warning: Use of Radiant Warmer: Use of the Dräger RH600 warmer is recommended. Dräger cannot warrant or endorse the safe performance of third party radiant warmers for use with the Babytherm 8000 LDR. Specifically, combinations with radiant warmers that are not intended for use with heated bassinets bear risks of excessive overall heat transfer to the infant.

Caution: Remove from mattress all objects with sharp edges. Do not fold gel mattress. The gel mattress may become damaged.

Precautions During Care

Warning: Always follow accepted hospital procedures for handling equipment contaminated with body fluids.

Warning: Always disconnect AC line cord before cleaning and disinfecting.

Caution: Do not launder mattress in an automatic washing machine. Do not autoclave mattress.

Precautions During Maintenance

Warning: To minimize the risk of infection, clean and disinfect bassinet and accessories before any maintenance according to established hospital procedures – this applies also when returning units or parts for repair.

Warning: Maintenance work on the Babytherm 8000 LDR may be performed by trained and factory authorized staff only.

Warning: Never operate the heated bassinet if it has suffered physical damage or does not seem to operate properly. In this case, always refer servicing to properly trained and factory authorized service personnel.

Intended Use

Babytherm 8000 LDR is a heated bassinet intended as a therapeutic device providing warmth, with or without the use of a canopy, for premature and full-term neonates and infants up to 16 lbs.

Description

Mattress Heating

The Babytherm 8000 LDR features a mattress heating system that uses conductive heat to warm up infants and to keep them warm.

The system consists of a gel mattress, a heating plate and an electronic control and monitoring unit. The gel is enclosed by a soft, skin compatible film.

The mattress molds itself to the body contours of the infant lying on it, resulting in a large contact surface, a property that helps promote thermal heat transfer to the infant and minimizes pressure points. A cold gel mattress, on the other hand, dissipates infant thermal energy. The gel material has an excellent capacity for storing heat. When the power supply is disconnected (e. g. during transport within the hospital), the infant is kept warm for approximately 15 minutes if sufficiently insulated (blanket, cover).

The heating plate consists of an aluminum plate with a heater element attached to its under side. It distributes heat evenly over the entire bed area.

The control and monitoring unit is located under the heating plate and faces the side most frequently accessed by caregivers.

The micro-processor controlled system continuously monitors the status of the electronic temperature control and alarm system, and alerts the user if any faults are detected.

Features

With its ergonomic design including:

- foldable side panels for increased access to the infant
- tilting bed for Trendelenberg and reverse Trendelenberg position
- pop-up side table – integrated hand rail
- cable management system
- storage space in the cabinet
- 5 inch diameter castors, two with locks
- optional canopy

it serves an important function for newborn babies from the first minute after birth until discharge to home.

Preparation

Storage of Supplies

Always observe the stated weight limits when placing items on the shelf.

Installing Side Panels

The bassinet is surrounded by two side panels and two end panels, which can be opened independently of each other. End panels have cutouts with U-grommets for routing circuits and infant cables.

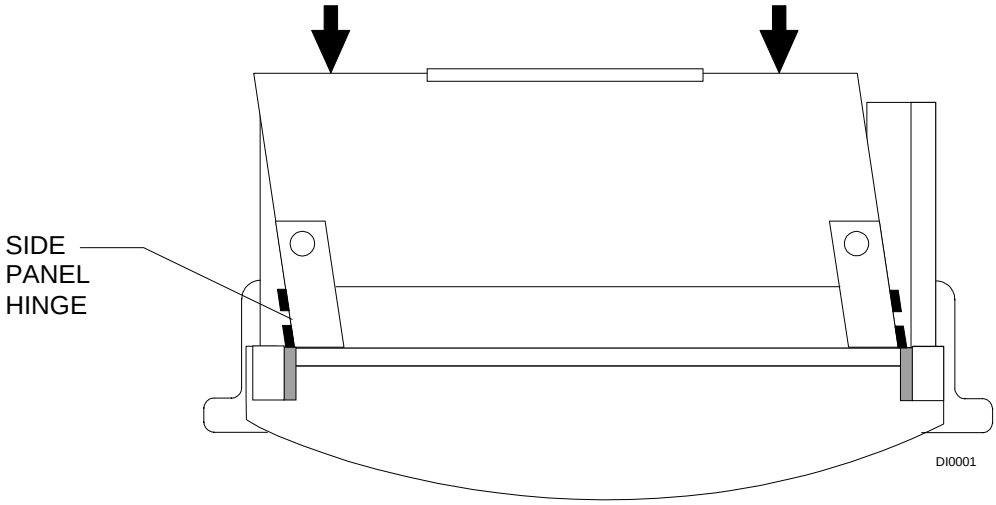


Figure 1. Installation of Side Panel

1. Insert lower pins on panel hinges into the left- and right-hand slots in bassinet base.
2. Position panel semi-upright.
3. Press panel down firmly, until pins lock into position at the bottom of slots.
   - Tilt panel fully upright and let it drop into locking position.
4. Install all four panels in the same fashion.
5. Verify the panels are seated correctly.

Opening Side Panels

To open Babytherm side panels:

1. Lift panel all the way up, until upper pins on hinge brackets are out of their guide slots.
2. Fold down.

Installing Canopy (OPTIONAL)

Place canopy over side and end panels so that the flanges on the canopy interlock with the end panel cutouts.

Selecting a Mattress

1. Select mattress type:
   - Operation with mattress heating:
     Gel mattress (Part No. 2M20827) [PROVIDED].
   - Operation without mattress heating:
     Foam rubber mattress (Part No. 2M21012) [OPTIONAL].
2. Place the mattress in bassinet and cover it with a thin sheet.

   Warning: Always use a proper fitting thin sheet (Part No. 2M21272) [PROVIDED]. Do not fold the sheet under the gel mattress more than 3". To prevent infant fall in Trendelenberg or reverse Trendelenberg position always use proper fitting mattress sheet.

   Warning: Do not obstruct conductive heat transfer by placing additional blankets or other insulating covers placed underneath the infant.

   Warning: Use of gel mattress when mattress heater is switched off will result in infant becoming hypothermic. Use foam rubber mattress when mattress heater is not in use for extended periods (> 15 min.).

Tilting the Bed

The bed can be locked in three positions: head up, level, or feet up.

1. Pull handle of locking mechanism up.
2. Tilt the bed as desired.

   Tilt angles:
   - Trendelenberg position: 10°
   - Reverse Trendelenberg position: 10°
3. Release locking handle, the bed locks into position.

Tests of Readiness for Operation

1. Verify that supplied voltage agrees with the values indicated on the rating plate next to the power cable.
2. Inspect the power plug and power cord for signs of wear.
3. Inspect gel mattress and infant area for signs of damage.

Preuse Checkout Procedure

Prior to each use:

1. Disinfect the Babytherm per institutional procedures.
2. Lock the side and end panels securely into place.
3. Verify that all panels are free of cracks and sharp edges.
4. Verify that the correct mattress is in the bassinet.
   - Operation with mattress heater ⇒ gel mattress,
   - Operation without mattress heater ⇒ foam rubber mattress.
5. Check the bed tilt positions and lock securely into required angle.
6. Verify that all patient lines and circuits are securely and properly installed.

   Caution: Never route infant circuits or lines over top of panels – they may get pinched when folding up panels or when installing cover.
7. Verify that the storage doors and the pop-up table are working properly.
8. Verify that the two locking casters function properly.
9. Lay gel mattress flat on the heating plate.
10. Connect plug to properly grounded, hospital grade power outlet.
11. Press

button.
    a. all LEDs illuminate for approximately 2 seconds
    b. numeric displays show **88.8**
    c. an audible alarm is generated
    d. displays and LEDs extinguish
    e. the audible alarm is silent
    f. after 2 seconds, actual temperature is displayed.

    Note: This function check is possible during operation without affecting any of the settings.
12. Contact your DrägerService authorized service/dealer in case of failure.

General Precautions During Infant Care

Warning: To prevent infant fall, do not leave infant unattended when any panels are down. All panels must be erect and secure during transport to prevent infant fall.

- Check that all 4 panels are closed and locked securely into place.

Warning: To allow for adequate air flow while canopy is in use, do not obstruct openings around side panels of the bassinet.

Heat Therapy

The heating system provided with Babytherm 8000 LDR is a conductive mattress heater. Please refer to “Operation with Concurrent Use of a Radiant Warmer” on page 31 for information about use of Babytherm 8000 LDR in the presence of radiant warmers.

Warnings and Cautions

Heater Safety Precautions

Warning: Temperature Monitoring: Check the infant’s temperature and skin condition at regular intervals and adjust temperature setting to individual infant needs. Infant temperature must be monitored particularly carefully during phototherapy or while a radiant warmer is used in conjunction with the Babytherm heated bassinet.

Mattress Repair

Should the gel mattress become punctured or ruptured, use the Dräger mattress repair kit (Part No. 2M21324) to close the opening. In an emergency clear adhesive tape may be used to temporarily fix the mattress.

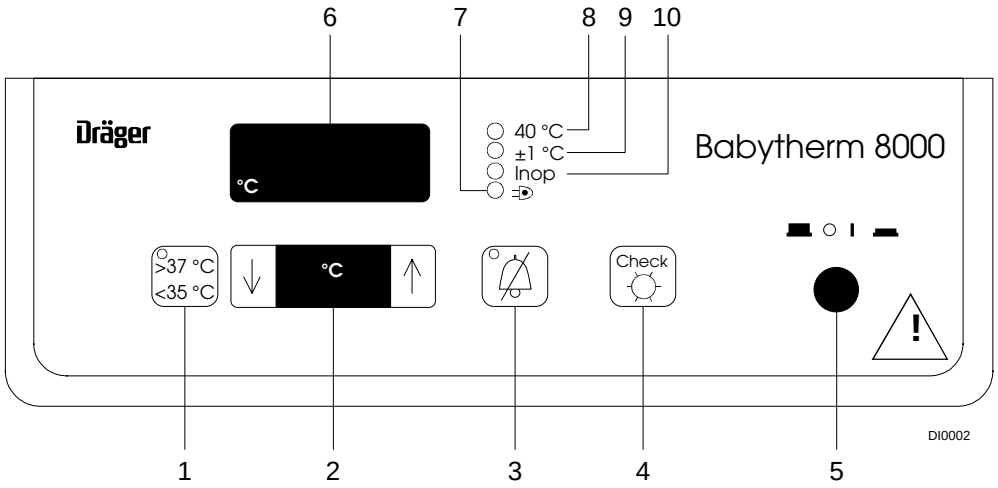
Caution: Remove from mattress all objects with sharp edges. Do not fold gel mattress. The gel mattress may become damaged.

Warning: Mattress Heater: When mattress heating is used, the gel mattress must be placed directly on the heated tray surface. Always take into account warm-up time of the mattress (approximately 1 hour) before placing an infant in the bassinet.

Warning: To minimize infant overheating, always consider effect of additional heat sources, such as phototherapy lamps or radiant warmers. They increase the heat directed to the infant. Avoid direct sunlight.

Warning: This device is to be used only in rooms with line power installations complying with national safety standards for hospital infant rooms. To maintain grounding integrity, connect only to a "hospital grade" receptacle. Always disconnect supply before servicing.

Mattress Heater Control Panel



Legend

(1) Button for extending range of settings to temperatures from 30° C to 38.5° C

(2) Display of mattress set temperature
- to the left of display: button for decreasing set temperature
- to the right of display: button for increasing set temperature

(3) Alarm silence button for silencing intermittent audible alarm for 15 minutes;
- Yellow LED in button illuminates while intermittent audible alarm is silenced

(4) Button for checking function of LEDs, displays and audible alarm

(5) Power switch

(6) Display of actual (measured) mattress temperature

(7) Red LED ; illuminates in case of power failure

(8) Red LED 40° C; flashes when measured mattress temperature exceeds 40° C

(9) Red LED ±1° C; flashes when measured mattress temperature deviates more than ±1° C from set value

(10) Red LED Inop; illuminates in case of unit malfunction

Figure 2. Babytherm Mattress Heater Control Panel

Mattress Heater Alarms

±1° C alarm	• Red LED ±1° C (9) flashes • actual value display flashes • intermittent audible alarm.
40° C alarm	• Red LED 40° C (8) flashes • actual value display flashes • continuous audible alarm.
Power failure	• Red LED ⇉ ; (7) illuminates • continuous audible alarm.
Inoperable device	• Red LED Inop (10) illuminates • **Err** appears on actual value display alternately with measured value • Error code is flashing in set value display, continuous audible alarm.
Sensor alarm	• 3 flashing dashes >>– – –<< in the middle of the actual value display (6)
Capacitor discharge alarm	• **Acc** appears on actual value • display (6) alternately with measured value. • Intermittent audible alarm.

Note: Due to periods of non-use, the capacitor powering the power failure alarm may become discharged. By turning the unit on, the backup capacitor will be charged automatically and the alarm will silence as soon as the capacitor is charged. Press alarm silence button to silence the **Acc** alarm until the capacitor is charged.

Control Systems Self-Test

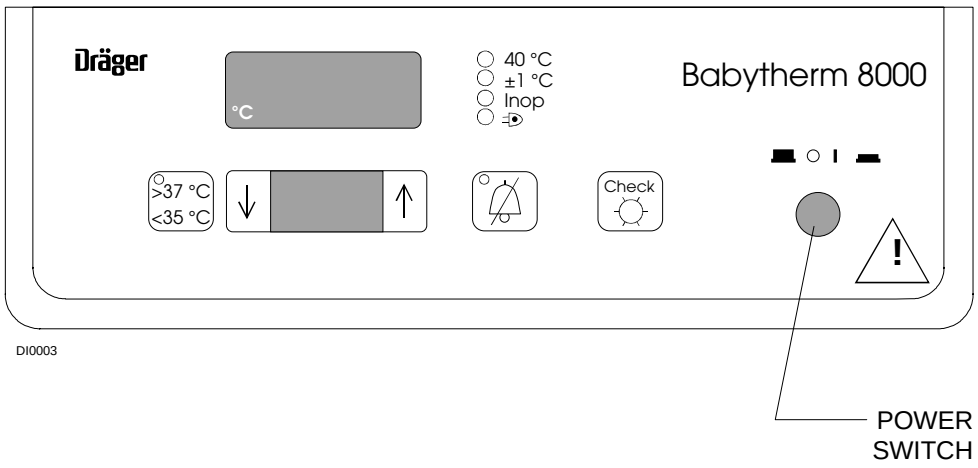


Figure 3. Babytherm Power On and Self-Test

Switching heater unit on activates the Babytherm systems self-test:

1. Press power switch until it engages = ON.
   a. A microprocessor self-test now checks proper function of the unit including all temperature sensors, power relays, AC and DC supply voltages and microprocessor watchdogs.
      - all LEDs illuminate
      - the numeric display shows **88.8**
      - an audible alarm is generated.
   b. After approximately 2 seconds, the unit shows the default set temperature of 37.0° C (display blinking).

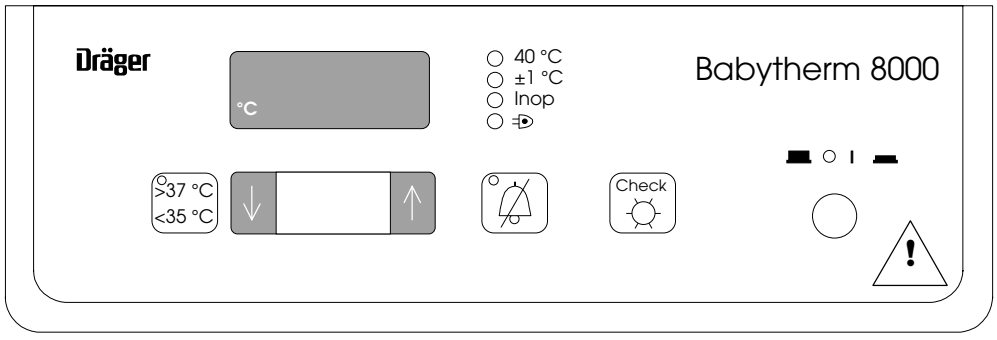


Figure 4. Setting Babytherm Temperature Control

   c. The display alternates between **SEt** = "Set value" and measured temperature.
2. Press down [↓] or up [↑] button to accept the default value as set value.

   Display now shows the measured mattress temperature continuously.

Power Failure Alarm Backup Recharging

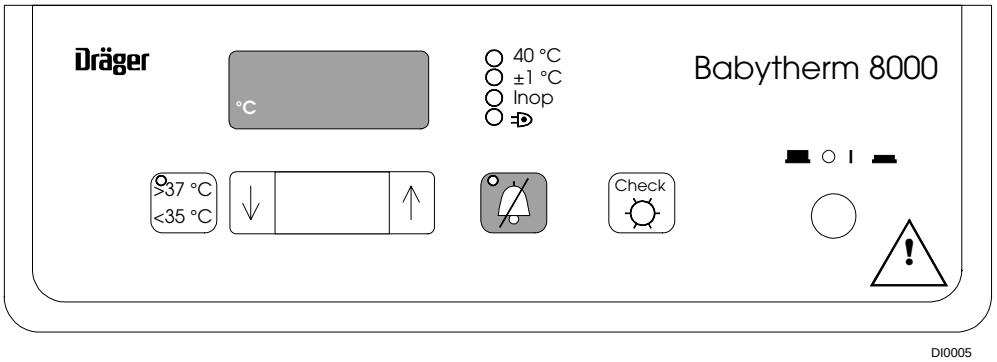


Figure 5. Insufficient Charge for Power Failure Alarm

The display may alternate between **Acc** = "rechargeable backup" and measured temperature with a simultaneous intermittent audible alarm. This means that the power failure alarm backup capacitor is not sufficiently charged.

1. Continue operation. After approximately 30 minutes, the backup capacitor will be fully charged. The display will then show the measured temperature continuously without an audible alarm.

To silence the audible alarm:

2. Press alarm silence button , its yellow LED will illuminate.

   An intermittent audible alarm can be silenced for 15 minutes.

Failure of Self-Test

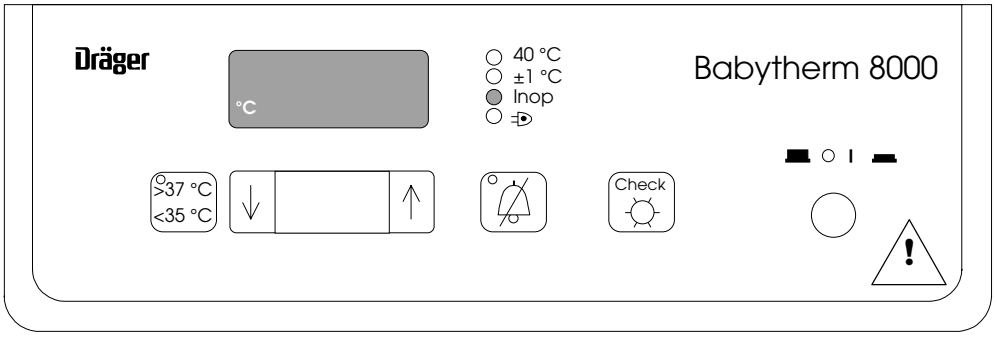


Figure 6. Control Panel Shows Failure of Self-Test

The display may alternate between **Err** and measured temperature, and red Inop LED illuminates. The unit is inoperative: see “Troubleshooting” on page 36 or consult qualified service personnel.

Control Systems Operator Test

Control Panel Checkout

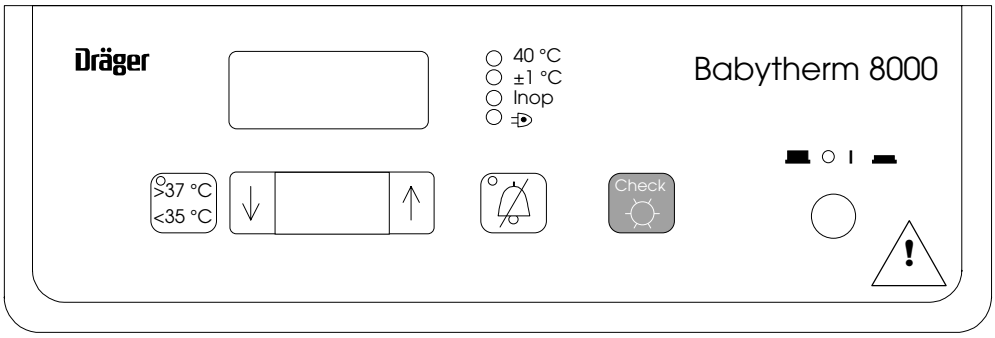


Figure 7. Operator Checkout of Control Systems

In order to check LEDs, displays and audible alarm:

1. Press Check button.
   a. all LEDs illuminate for approximately 2 seconds
   b. numeric displays show **88.8**
   c. an audible alarm is generated
   d. displays and LEDs extinguish
   e. the audible alarm is silent
   f. after 2 seconds, actual temperature is displayed.

   Note: This function check is possible during operation without affecting any of the settings.
2. Perform control systems check at least once daily.

Power Failure Alarm Checkout

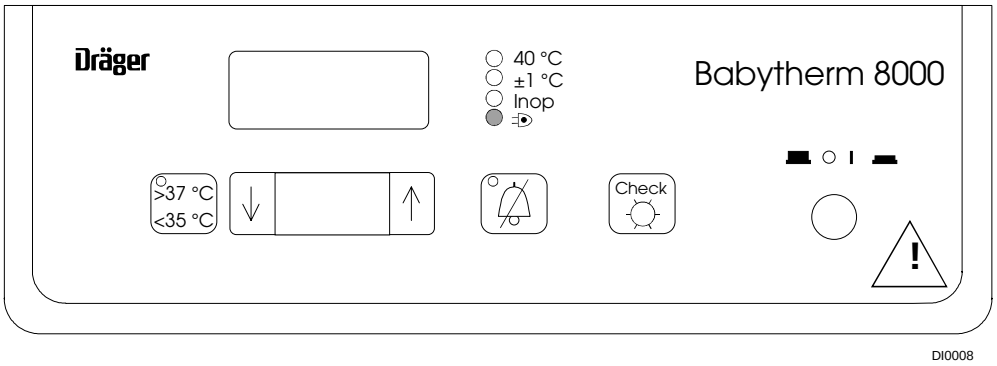


Figure 8. Operator Checkout of Power Failure Alarm

To check power failure alarm:

1. Remove power plug from outlet.

   Red LED illuminates and continuous audible alarm is generated.

2. Reconnect power plug.

   Red LED extinguishes. Audible alarm is silenced. Unit continues to operate with temperature values set prior to power failure.

Heater Operation

1. Set temperature to 38° C during warm-up. Allow approximately 1 hour for thorough warm-up. During warm-up and in standby mode, cover the gel mattress with a thick blanket to minimize heat loss to the environment.
2. Remove the thick blanket and place the infant on the gel mattress (now only covered with a thin sheet).
3. Set mattress temperature according to infant's needs and ambient conditions.
4. Monitor baby's temperature and adjust mattress temperature as needed. Allow time for the heated gel mattress to react to any changes to the temperature set point.

   Caution: Always use a thin sheet to cover the mattress.

   Warning: Do not obstruct conductive heat transfer by placing additional blankets or other insulating covers underneath the infant.

Operation without Concurrent Use of a Radiant Warmer

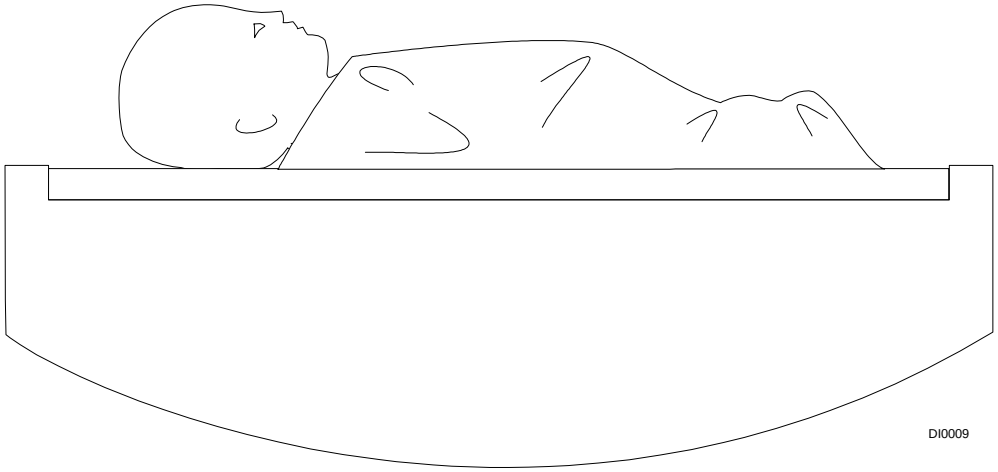


Figure 9. Babytherm Operation without Radiant Warmer or Canopy

When no radiant warmer is used:

1. Cover infant with a blanket.

   Warning: Use of gel mattress when mattress heater is switched off will result in infant becoming hypothermic. Use foam rubber mattress when mattress heater is not in use for extended periods (> 15 min.).

Oxygen Therapy with Canopy

Operator Precautions

An oxygen analyzer should be used when oxygen is administered. The following table illustrates approximate oxygen concentrations with the indicated flows.

Flow	Approximate Concentration
5 L/min O_2	30% O_2
10 L/min O_2	40% O_2
15 L/min O_2	50% O_2

Adjusting Mattress Temperature

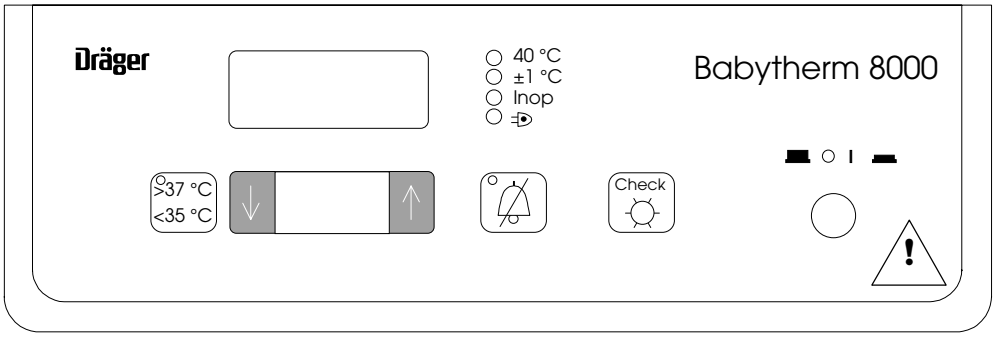


Figure 10. Adjusting Temperature Within Normal Range

Temperature can be varied in steps of 0.1 degree Celsius.

Setting the temperature in the normal range (35° C to 37° C):

1. Press and hold the down [↓] or up [↑] button until desired temperature is displayed.

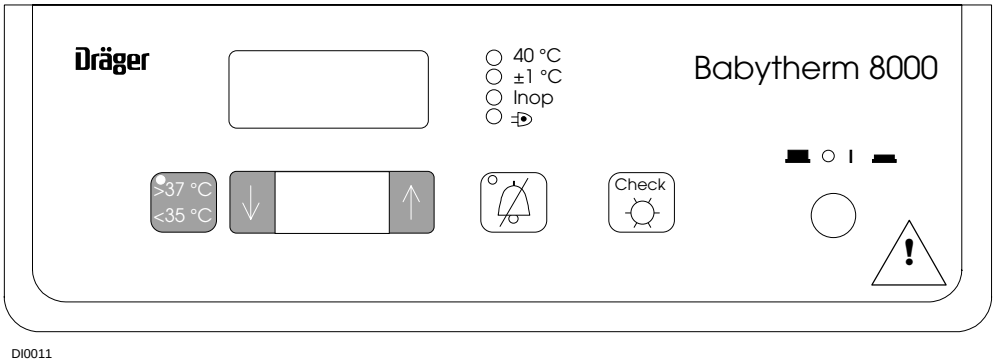


Figure 11. Adjusting Temperature in Extended Range

Setting temperature in extended range:

- extended lower range: 30° C to 35° C,
- extended upper range: 37° C to 38.5° C.

2. Press the extended range button.

   The yellow LED in the button is illuminated.

3. Within 1 minute, input a temperature above 37° C or below 35° C.

   - Hold the down [↓] or up [↑] button until desired temperature is showing on the display.

   If there is a delay between pressing the extended range button and entering the temperature value, the LED in the extended range button will extinguish and the extended temperature ranges will be locked again.

   Note: A change of more than 1° C in the settings will trip the temperature deviation alarm. Press the alarm silence button to silence the audible alarm. The display will flash until the temperature is within 1° C of the set temperature.

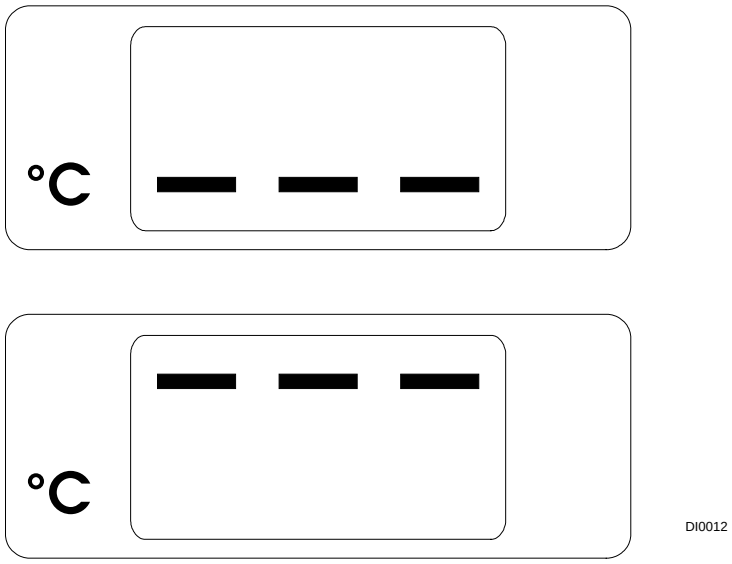


Figure 12. Control Panel Showing Temperature in Extended Range

When the temperature is outside a range from 5° C to 45° C:

- three dashes in the bottom of the display =
  the temperature is below 5° C
- three dashes in the top of the display =
  the temperature is above 45° C.

Note: This may occur, e. g., when the Babytherm 8000 LDR is stored in ambient conditions beyond the range of 5° to 45° C.

Heater Alarms

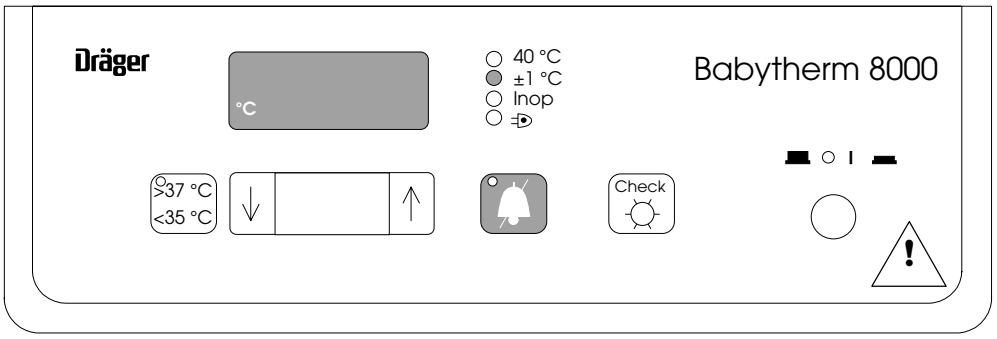


Figure 13. Control Panel Showing Set Temperature Alarm Condition

Deviation from set temperature:

In case of deviations greater than ±1° C between actual and set mattress temperature:

- red LED ±1° C flashes
- an intermittent audible alarm is generated
- the display flashes.

The intermittent audible alarm can be silenced for approximately 15 minutes:

1. Press the alarm silence button, its yellow LED will illuminate.
   - The red LED ±1° C remains illuminated.

When the actual mattress temperature has returned to a value within ±1° C of the set temperature:

- All visual and audible alarms are reset.

After the mattress heater is initially switched on:

- audible alarm is silenced for 1 hour (warm-up)
- red LED ±1° C is illuminated
- yellow LED in the button is illuminated.

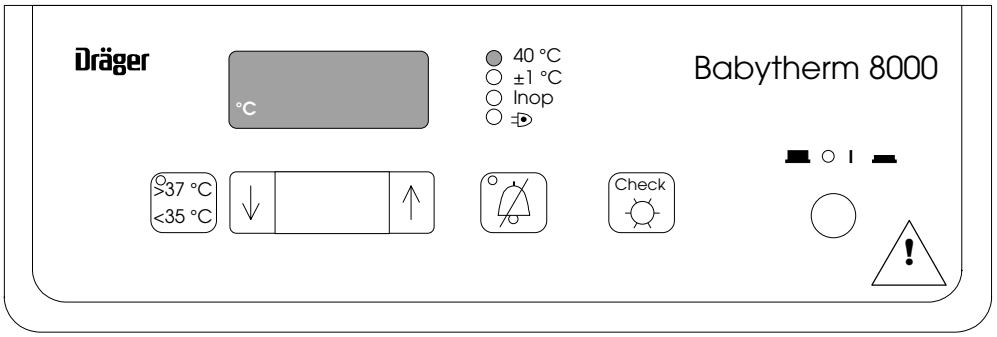


Figure 14. Control Panel Showing High Temperature Alarm Condition

40° C alarm:

In case of high temperature:

- red LED 40° C flashes
- a continuous audible alarm sounds.
- the display flashes.

Note: The continuous alarm cannot be manually silenced. The alarm resets automatically when the temperature decreases below 40° C.

Power-Down Procedure

This procedure applies only for equipment processing between uses.

1. Press the power switch on the front panel.

   All displays will be extinguished.
2. Disconnect power plug from outlet.
3. Store the power cord using the cable holder on the unit.

Using the Canopy

Warning: To prevent possible injury to operator or patient, do not use radiant warmer while canopy is in use.

Extreme care must me taken when using the canopy accessory (Part No. 2M21030) together with an infant radiant warmer. The radiant energy from the overhead radiant warmer will be absorbed by the canopy. The infant will not receive direct radiant energy from the radiant warmer, but a much lower indirect radiation from the warm canopy.

The use of the canopy may be desired with stable infants. When warming a cool infant, the use of the canopy will result in a much longer heat-up time.

- The maximum measured CO_2 concentration with the canopy in place is 0.1%, when measured in accordance with IEC 601-2-19, subclause 105.
- Always use a foam rubber mattress (Part No. 2M21012).
- Do not use a gel mattress without mattress heating, or when mattress heating is switched off.

Warning: Temperature Monitoring: Check the infant's temperature and skin condition at regular intervals and adjust temperature setting to individual infant needs. Infant temperature must be monitored particularly carefully during phototherapy or while a radiant warmer is used in conjunction with the Babytherm 8000 LDR heated bassinet.

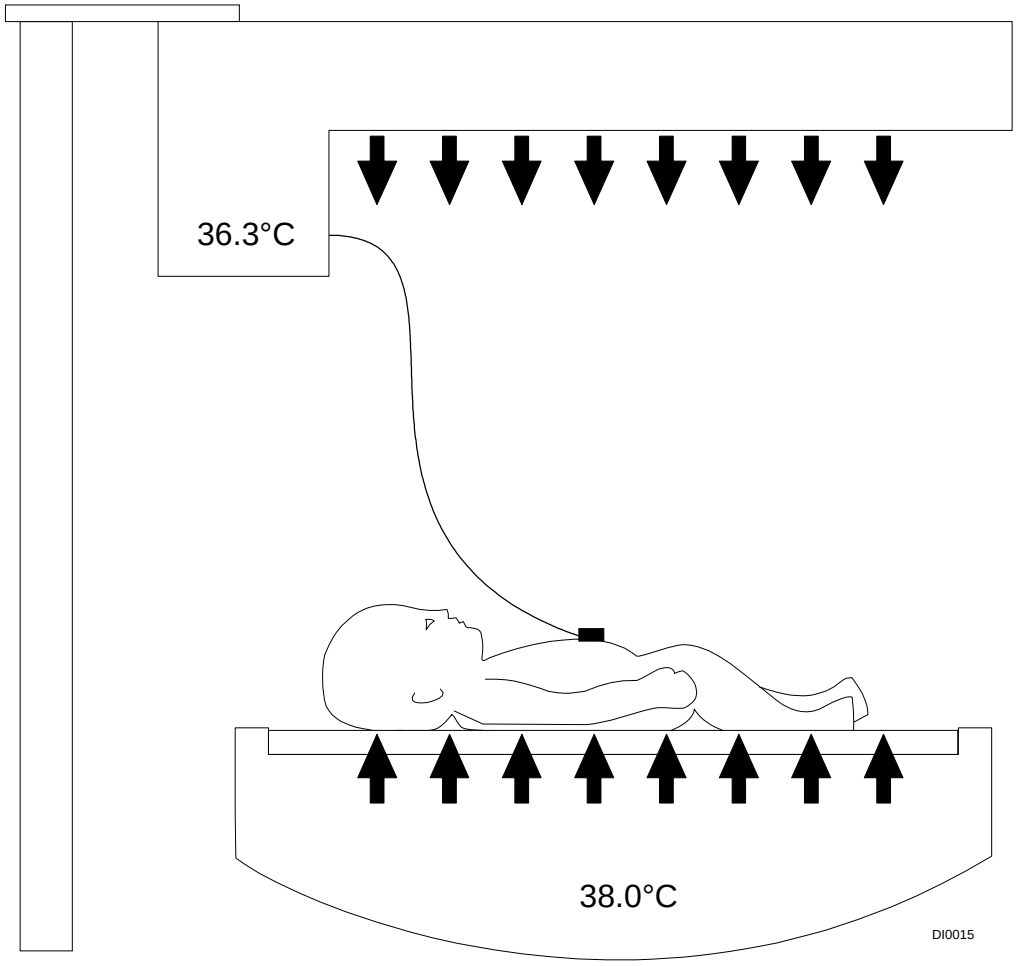


Figure 15. Babytherm Operation with Radiant Warmer and Mattress Heating

Using radiant warmers and mattress heating with a gel mattress:

To add warmth from below, in addition to a radiant warmer.

1. Set mattress heater temperature to, e. g., 38° C.
2. Set skin temperature at the radiant warmer to the desired skin temperature of the infant.

Warning: Use of gel mattress when mattress heater is switched off will result in infant becoming hypothermic. Use foam rubber mattress when mattress heater is not in use for extended periods (> 15 min.).

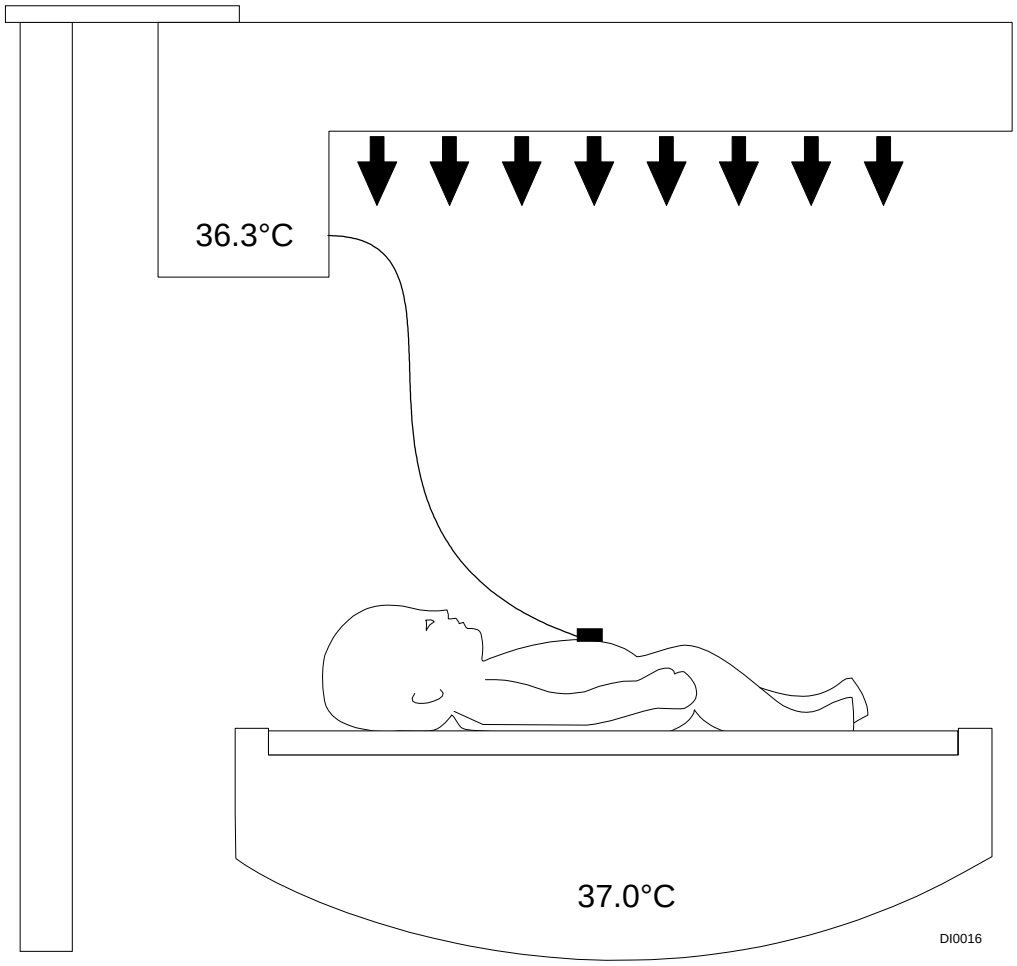


Figure 16. Babytherm Operation for Neutral Balance

To achieve a neutral balance:

1. Set mattress heater temperature to, e.g., 37° C.
2. Set skin temperature at the radiant warmer to the desired skin temperature of the infant.

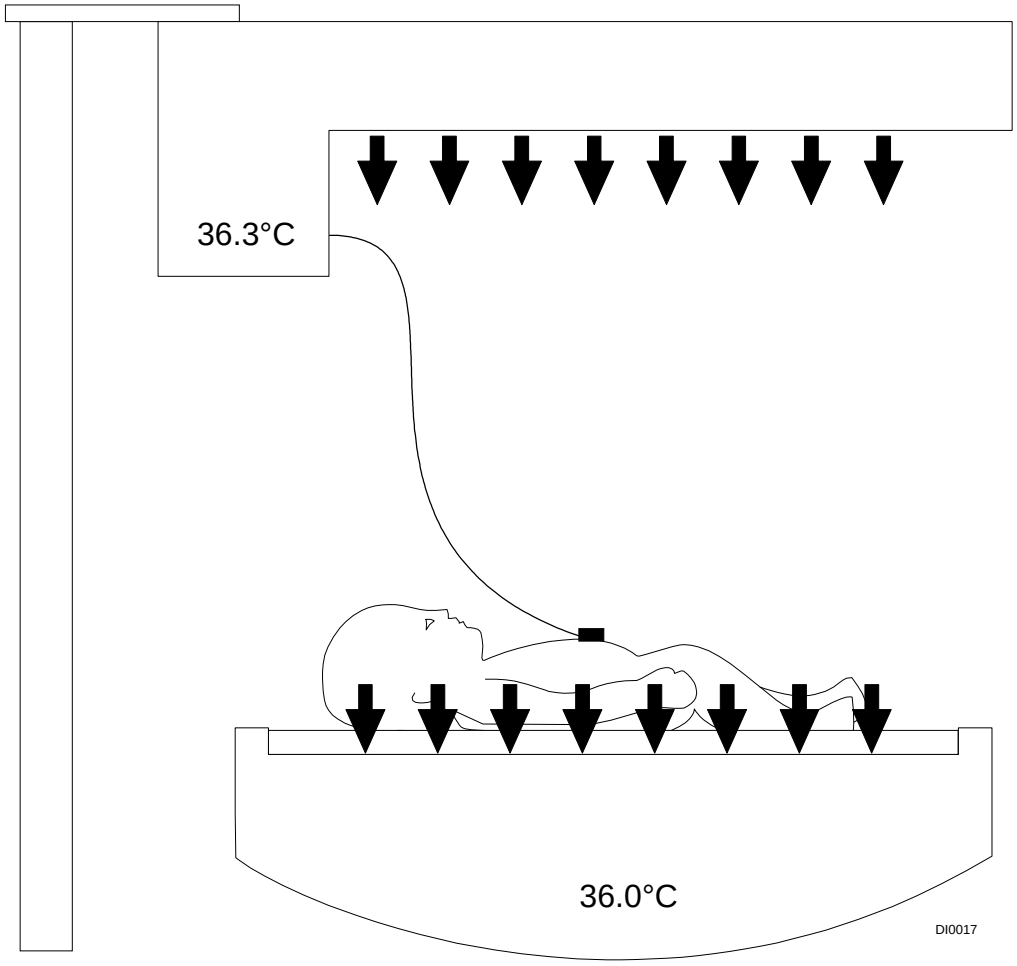


Figure 17. Babytherm Operation to Cool Infant

To cool the infant from below:

1. Set mattress heater temperature to, e.g, 36° C.
2. Set skin temperature at the radiant warmer at the desired skin temperature of the infant.

   Note: Always consider the effect of the two independent heat sources: The overhead radiant warmer and the heated gel mattress.

Warming and cooling down an infant can be achieved with different settings of both warmers. Always choose the appropriate settings with regards to the infant's needs and the ambient conditions.

An overhead radiant warmer will supply a large amount of energy quickly. The radiant warmer energy can be controlled by the infant's skin temperature via a skin temperature sensor.

The heated gel mattress provides additional heat (or cooling) depending on the settings relative to the infant's temperature. The heated gel mattress will provide gentle, conductive heat at lower level with slower increase (or decrease) compared to an infant radiant warmer.

The heated gel mattress will significantly reduce the time to heat up an infant compared to an infant radiant warmer alone.

Operation with Concurrent Use of a Radiant Warmer

Warning: Use of Radiant Warmer: Dräger recommends the use of the Dräger RH600 warmer. Dräger cannot warrant or endorse the safe performance of third party radiant warmers for use with the Babytherm 8000 LDR. Specifically, combinations with radiant warmers that are not intended for use with heated bassinets bear risks of excessive overall heat transfer to the infant.

Warning: Temperature Monitoring: Check the infant's temperature and skin condition at regular intervals and adjust temperature setting to individual infant needs. Infant temperature must be monitored particularly carefully during phototherapy or while a radiant warmer is used in conjunction with the Babytherm 8000 LDR heated bassinet.

Warning: To minimize infant overheating, always consider effect of additional heat sources, such as phototherapy lamps or radiant warmers. They increase the heat directed to the infant. Avoid direct sunlight.

Warning: When used with an infant radiant warmer check its operators manual for directions of the correct heat level and distance to the infant.

Warning: Use of radiant warmers may increase insensible water loss. Measures to maintain desired fluid levels should be considered.

Warning: To prevent possible injury to operator or patient, do not use radiant warmer while canopy is in use.

Cleaning/Disinfecting/Sterilizing

Care

The Babytherm 8000 LDR heated bassinet must be thoroughly cleaned and disinfected after each infant. Perform any disinfection procedures according to established hospital procedures as well as to the following additional instruction.

Warning: Always follow accepted hospital procedures for handling equipment contaminated with body fluids.

Before any cleaning procedures, the bassinet must first be partially disassembled. For the cleaning and disinfecting of accessories, see their respective Operating Instructions.

Disassembly

1. Switch off the Babytherm warming bed.
2. Disconnect power cord from AC receptacle.

   Warning: Always disconnect AC line cord before cleaning and disinfecting.
3. Remove any ancillary infant care equipment from unit.
4. Remove mattress from bassinet.
5. Store the mattress flat; do not fold or roll.

   Caution: Remove all sharp objects from mattress. Do not fold gel mattress. The gel mattress may become damaged.

Cleaning and Disinfection Procedures

To prevent any damage, we recommend using only detergents and disinfectants compatible with the materials used in the bassinet and its components and accessories. Use aldehydes, or quarternary ammonium compounds according to manufacturer's label and established hospital disinfection procedures.

Always follow the instruction labels specifically with respect to prescribed concentrations and the necessary exposure times.

Warning: To minimize any risk of infection, clean and disinfect bassinet and accessories before any maintenance according to established hospital procedures – this also applies when returning units or parts for repair.

Caution: Do not use alcohol on the side and end panels; it will damage materials.

Caution: Do not launder mattress in an automatic washing machine. Do not autoclave mattress.

1. Follow manufacturer's instructions for use of the cleaning/disinfection detergent for effective wipe-disinfection.
2. Wipe-disinfect the following surfaces:
   - side and end panels, inside and outside
   - resting surface
   - acrylic canopy
   - gel mattress (foam rubber mattress)
   - wooden bassinet, including attachments.
3. Remove visible impurities with a cloth and detergent.
4. Wipe with a damp cloth.
5. Dry with a clean cloth.

Before Next Use

1. Reassemble components.
2. Operate unit for a few hours without an infant, in order to eliminate any disinfectant residues from prior disinfection (at mattress temperature setting of 37° C).
3. Check the wood surface for sharp nicks. Any sharp nicks on the surface of the wood bassinet need to be repaired by authorized service personnel.

Before an infant is placed in the Babytherm 8000 LDR:

4. Set up accessories for therapy as needed.
5. Check readiness for operation. See "Tests of Readiness for Operation" on page 13.
6. Verify that mattress is sufficiently preheated.

Inspection and Maintenance

Precautions

Warning: To minimize any risk of infection, clean and disinfect bassinet and accessories before any maintenance according to established hospital procedures – this applies also when returning units or parts for repair.

Warning: Always disconnect power before servicing.

Warning: Never operate the heated bassinet if it has been damaged or does not seem to operate properly. In this case always refer servicing to properly trained and factory authorized service personnel.

Repair and Replacement of Parts

Gel mattress	For damage to the gel mattress use the Dräger repair kit (Part No. 2M21324).
Grommets	Replace broken or lost grommets.

Preventive Maintenance Intervals

The Accreditation Manual for hospitals requires each piece of equipment to be tested prior to initial use and at least annually thereafter. To comply with this standard, it is recommended that you participate in our Periodic Manufacturer's Service Program. This service can be performed by authorized DrägerService technicians.

Troubleshooting

Mattress Heater

Problem/Message	Likely Causes	Remedy
Red LED ±1° C flashes, actual value display flashes, intermittent audible alarm	Measured mattress temperature deviates from set temperature by more than ±1° C.	During operation with radiant warmer: reduce radiant warmer output.
Red LED 40° C flashes, actual value display flashes, continuous audible alarm.	Mattress temperature >40° C	During operation with radiant warmer: reduce radiant warmer output.
Red LED ⏻ illuminated, continuous audible alarm.	No electrical power	Check power connection. Call DrägerService[SM].
Red LED Inop illuminates, **Err** appears on actual value display alternately with measured value. Error code is flashing in set value display, continuous audible alarm.	Device malfunction	Call DrägerService[SM].
3 flashing dashes >> - - - << in the middle of the actual value display.	Failed temperature sensors	Call DrägerService[SM].
Acc appears on actual value display alternately with measured value. Intermittent audible alarm. See “Power Failure Alarm Backup Recharging” on page 19.	Backup capacitor for power failure alarm is not charged sufficiently.	Operate device for 30 minutes, Press button [Alarm Silence], audible alarm will be silenced for 15 minutes.

Precautions

Operator Precautions

OPERATOR PRECAUTIONS

1. Do not switch off heater while infant is lying on the gel mattress as this may lead to accidental hypothermia.
2. Use foam mattress when heater is to remain switched off.
3. When used with a radiant warmer, check its operator's manual for directions on correct heat level and distance to infant.
4. Check infant's temperature and skin condition at regular intervals and adjust temperature setting to infant's needs.
5. An oxygen analyzer should be used when oxygen is administered.

Flow	approximate concentration
5 L/min O_2	30% O_2
10 L/min O_2	40% O_2
15 L/min O_2	50% O_2

PRÉCAUTIONS À PRENDRE

1. Risque d'hypothermie. Ne pas arrêter le chauffage lors de l'utilisation d'un matelas-gel.
2. Utiliser un matelas caoutchouc-mousse lors d'un arrêt de longue durée du chauffage.
3. Lors de l'utilisation de chauffage radiant, utiliser la notice d'utilisation pour le reglage approprié de température et distance en fonction des besoins du patient.
4. Surveillier régulièrement la température et l'état de la peau du nourisson et régler le chauffage en fonction des besoins de patient.
5. Lors de l'administration en oxygène, utiliser un analyseur d'oxygène.

Débit recommandé	pour concentration approximative
5 L/min O_2	30% O_2
10 L/min O_2	40% O_2
15 L/min O_2	50% O_2

Warning - Fire Hazard

WARNING - FIRE HAZARD!

Keep matches, lighted cigarettes and all other sources of ignition out of room where Babytherm 8000 LDR is located.

ATTENTION - RISQUE D'INCENDIE!

Garder toute source d'allumage (ex: allumettes, cigarettes, étincelles et flammes) hors de la chambre des lits chauffés stationnés.

Caution

CAUTION!

To maintain grounding integrity, connect only to a properly wired "hospital grade" receptacle.

To reduce risk of electric shock, do not remove controller cover.

Federal (USA) law restricts this device to sale by or on the order of a physician.

ATTENTION!

Pour assurer une mise à la terre approprié n'utiliser que les prises murales conforme aux exigences de l'hôpital.

Pour éviter tous risques d'électrocution ne pas enelever le ou les panneaux de protections.

Danger

DANGER!

Risk of explosion if used in the presence of flammable anesthetics.

DANGER!

Risque d'explosion à proximité d'agents anesthésiques inflammable.

Warning

WARNING!

1. To allow for adequate air flow while canopy is in use, do not obstruct openings around side panels of the bassinet.
2. To prevent possible injury to operator or patient, do not use radiant warmer while canopy is in use.
3. Disconnect power before servicing.
4. To reduce risk of electric shock, do not remove cover.
5. Repairs on this equipment to be performed only by DrägerService^{SM} or its authorized service centers.

ATTENTION!

1. Ne pas obstruer les trous d’aération lorsque le couvercle est placé.
2. Pour éviter tous risques d’incident de l’utilisateur ou du patient, ne pas mettre le chauffage radiant en marche lorsque le couvercle est placé.
3. Débrancher l'appareil avant toute intervention.
4. Pour éviter tous risques d’électrocution ne pas enlever le ou les panneaux de protections.
5. Les réparations et révisions de l'appareil doivent être confiées uniquement au DrägerService^{SM} ou personnel autorisé par le DrägerService.

Technical Data

Ambient conditions

Operation

Temperature . . . . . 20° C to 30° C (68° F to 86° F)

Relative humidity . . . . . .0 to 90%, noncondensing

Storage

Temperature. . . . . –20° C to 60° C (-4° F to 140° F)

Relative humidity . . . . . .0 to 90%, noncondensing

Electrical

Electrical Safety Standard . . . . . IEC 601-1, UL 2601-1, ... CAN/CSA-22.2 No. 601.1-M90, NRTL/C

Equipment Class . . . . . .Class I, Type B, IPX-0

Heating surface of mattress . . . . . Type BF

RFI suppression . . .complies with EN 55011, 1991/EN 55014, 1993; . . . . . VfG 293/1991; and Directive 89/336/EEC

Fuses . . . . . T 1.6 A L 250 V; IEC 127-2/III (two)

Input voltage . . . . . 120V @ 50-60 Hz

Input current . . . . . .1.4 amps

Power consumption . . . . . .160 W

Temperature

Measurement range . . . . . 5° C to 45° C

Accuracy . . . . . ±0.5° C

Setting range . . . . . 30° C to 38.5° C

Dimensions

Length x Width . . . . . 940 x 620 mm (37.0 x 24.4 inches)

Total height (with cover) basic unit . . . . . 1245 mm (49 inches)
. . . . . .or 1321 mm (52 inches)

Working height of the bed surface . . . . . 914 mm (36 inches)
. . . . . .or 991 mm (39 inches)

bed size . . . . . 750 x 490 mm (29.5 x 19.3 inches)

Mattress position . . . . . ±10° from level

Height of side and end panels . . . . . 150 mm (5.9 inches)

Weight (with cabinet and canopy) basic unit . . . . . 85 kg (187 lbs)

Ordering Information

Name and Description	Part No.
Babytherm 8000 LDR (36-inch or 39-inch height)	4114635
Option Set of side panels, height 150 mm	
• yellow	2M21032
• white	2M30242
Canopy	2M21030

Name and Description	Part No.
Foam rubber mattress for unheated bassinet	2M21012
Gel mattress for use with mattress heater	2M20827
Mattress sheet	2M21272
Silicone U-grommet	2M20434
Mattress Repair Kit	2M21324
Power cord, 15-foot	4109600
Documentation on request Service Manual	

Notes

North
American
Dräger

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Part Number: 4114750-001 (Babytherm® 8000 LDR Instructions for Use)

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